

WHAT IS CLAIMED IS:

1. A soft magnetic film which is represented by the formula  $(\text{Fe}_x\text{Ni}_y)_a\text{Mo}_b$  and which is formed by plating, wherein  
5 0.65 ≤ x ≤ 0.75 and x + y = 1 are satisfied when x and y are on a mass percent ratio basis, and 0 < b ≤ 5 and a + b = 100 are satisfied when a and b are on a mass percent basis.
2. The soft magnetic film according to Claim 1, wherein  
10 the resistivity of the soft magnetic film is 40 μΩ·cm or more.
3. The soft magnetic film according to Claim 1, wherein the mass percent ratio x of Fe is 0.65 or more, and the  
15 resistivity of the soft magnetic film is 55 μΩ·cm or more.
4. The soft magnetic film according to Claim 3, wherein the mass percent ratio x of Fe is 0.65 or more, and the resistivity of the soft magnetic film is 70 μΩ·cm or more.  
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5. The soft magnetic film according to Claim 1, wherein the saturated magnetic flux density Bs is 1.50 T or more.
6. The soft magnetic film according to Claim 5, wherein  
25 the saturated magnetic flux density Bs is 1.67 T or more.
7. The soft magnetic film according to Claim 6, wherein the saturated magnetic flux density Bs is 1.78 T or more.

8. The soft magnetic film according to Claim 7, wherein the saturated magnetic flux density  $B_s$  is 1.90 T or more.

5 9. The soft magnetic film according to Claim 1, wherein the coercive force  $H_c$  is 96 A/m or less.

10 10. A thin film magnetic head comprising:  
a lower core layer composed of a magnetic material;  
an upper core layer formed above the lower core layer  
with a magnetic gap provided therebetween; and  
a coil layer applying a recording magnetic field to the two core layers,  
wherein at least one of the core layers is composed of a  
15 soft magnetic film represented by the formula  $(Fe_xNi_y)_aMo_b$   
and is formed by plating, in which  $0.65 \leq x \leq 0.75$  and  $x+y=1$  are  
satisfied when  $x$  and  $y$  are on a mass percent ratio basis, and  
 $0 < b \leq 5$  and  $a+b=100$  are satisfied when  $a$  and  $b$  are on a mass  
percent basis.

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11. The thin film magnetic head according to Claim 10, further comprising a bulged lower magnetic pole layer on the lower core layer at a face opposing a recording medium.

25 12. The thin film magnetic head according to Claim 10, further comprising a magnetic pole portion which is disposed between the lower core layer and the upper core layer, the width of the magnetic pole portion in a track width direction

being set to smaller than that of each of the lower core layer and the upper core layer,

wherein the magnetic pole portion is formed of a lower magnetic pole layer in contact with the lower core layer, an upper magnetic pole layer in contact with the upper core layer, and a gap layer located between the lower magnetic pole layer and the upper magnetic pole layer, or the magnetic pole portion is formed of an upper magnetic pole layer in contact with the upper core layer and a gap layer located between the upper magnetic pole layer and the lower core layer.

13. The thin film magnetic head according to Claim 11, wherein at least a part of the core layers, which is adjacent to the magnetic gap, comprises at least two magnetic layers, or the magnetic pole layer comprises at least two magnetic layers, and at least one of the magnetic layers, which is disposed away from the magnetic gap, is formed of the soft magnetic film.

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14. The thin film magnetic head according to Claim 12, wherein at least a part of the core layers, which is adjacent to the magnetic gap, comprises at least two magnetic layers, or at least one of the magnetic pole layers comprises at least two magnetic layers, and at least one of the magnetic layers, which is disposed away from the magnetic gap, is formed of the soft magnetic film.